

What is claimed is:

1. A method for evaluating biological tissue, comprising:
 - a) treating biological tissue with an iron oxide contrast agent; and
 - b) imaging the tissue with ^{23}Na or ^{39}K magnetic resonance.
2. The method of claim 1 wherein the tissue is imaged with ^{23}Na MRI.
3. The method of claim 1 wherein the tissue is imaged with ^{39}K MRI
4. The method of any one of claims 1 through 3 wherein the tissue is cardiac tissue.
5. The method of claim 1 through 3 wherein the tissue comprises infarcted cardiac tissue.
6. The method of any one of claim 1 through 5 further comprising assessing the MRI image to detect infarcted tissue.
7. The method of any one of claims 1 through 6 wherein the contrast agent comprises one or more iron atoms coordinated with a polymer.
8. The method of any claims 1 through 6 wherein the contrast agent comprises one or more iron atoms coordinated with a polymer having oxygen substitution.
9. The method of any one of claims 1 through 6 wherein the contrast agent comprises one or more iron atoms coordinated with a polysaccharide.
10. The method of any one of claims 1 through 6 wherein the contrast agent comprises one or more iron atoms coordinated with a dextran.

11. The method of any one of claims 1 through 6 wherein the contrast agent is MION-46.

5 12. The method of any one of claims 1 through 11 wherein the contrast agent is administered to a subject suffering from or susceptible to myocardial infarction.

13. The method of claim 12 further comprising selecting a subject suffering or susceptible to myocardial infarction and then administering the contrast agent to the
10 selected subject.

14. The method of any one of claims 1 through 13 wherein the contrast agent is administered to a subject and a magnetic resonance study is made of the subject's heart.

15 15. The method of claim 14 wherein the magnetic resonance study differentiates between normal myocardial tissue, injured myocardial tissue and infarcted myocardial tissue.

16. A method identifying infarcted myocardial tissue of a subject comprising:
20 a) administering to the subject an imaging-effective amount of an iron oxide contrast agent; and
b) imaging the subject's heart with ^{23}Na or ^{39}K magnetic resonance.

17. The method of claim 16 wherein the subject is suffering from or has
25 suffered cardiac disorder.

18. The method of claim 16 or 17 wherein the subject is suffering from or has suffered heart failure or cardiogenic shock.

30 19. The method of claim 16 or 17 wherein the subject is suffering from or has suffered a cardiovascular disorder.

20. The method of any one of claims 16 through 19 wherein the tissue is imaged with ^{23}Na MRI.

21. The method of any one of claims 16 through 19 wherein the tissue is imaged with ^{39}K MRI.

22. The method of any one of claims 16 through 21 wherein the contrast agent comprises one or more iron atoms coordinated with a polymer.

23. The method of any claims 16 through 21 wherein the contrast agent comprises one or more iron atoms coordinated with a polymer having oxygen substitution.

24. The method of any one of claims 16 through 21 wherein the contrast agent comprises one or more iron atoms coordinated with a polysaccharide.

25. The method of any one of claims 16 through 21 wherein the contrast agent comprises one or more iron atoms coordinated with a dextran.

27. The method of any one of claims 16 through 21 wherein the contrast agent is MION-46.

28. A magnetic resonance system comprising:
a magnetic resonance imaging apparatus for ^{23}Na or ^{39}K imaging; and an iron oxide contrast agent.

29. The system of claim 28 wherein the system is adapted for ^{23}Na imaging.

30. The system of claim 28 wherein the system is adapted for ^{39}K imaging.

31. The system of any one of claims 28 through 30 wherein the contrast agent comprises one or more iron atoms coordinated with a polymer.

32. The system of any one of claims 28 through 30 wherein the contrast agent
5 comprises one or more iron atoms coordinated with a polymer having oxygen substitution.

33. The system of any one of claims 28 through 30 wherein the contrast agent
10 comprises one or more iron atoms coordinated with a polysaccharide.

34. The system of any one of claims 28 through 30 wherein the contrast agent
comprises one or more iron atoms coordinated with a dextran.

35. The system of any one of claims 28 through 30 wherein the contrast agent
15 is MION-46.

36. The system of any one of claims 28 through 35 wherein the contrast agent
is packaged in a pharmaceutically acceptable form.
20